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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/799,704
Filing Date: March 15, 2004
Appellant(s): BABIARZ ET AL.

Thomas E. Anderson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 5, 2008 appealing from the Office action mailed April 8, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments after Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

20030107994

Jacobs et al

6-2003

Kelly T. (An ECN Probe Base Connection Acceptance Control) paper- July 2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16, 18-20, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelly T. (An ECN Probe Based Connection Acceptance Control) paper in view of Jacobs et al (US 2003/0107994 A1).

Regarding claim(s) 1 and 23, Kelly discloses a method for end-to-end admission control of real-time packet flows in a network having a plurality of network elements (Fig. 2, Section 2), the method comprising:

transmitting at least one probe packet from a first network element to a second network element via a network path (section 4, host A sends a probe packet to host B); determining, at least one intermediate network element on the network path (section 1 col 2 last Para, routers within the network of end-to end systems act as intermediate network elements on the network path), at least one flow rate associated with a plurality of packets (section 4 col 2 Para 2, target rate R is the flow rate of host A).

Kelly fails to disclose encoding at least two predetermined bits in the at least one probe packet based at least in part upon a level of congestion associated with the at least one flow rate and controlling an admission of additional packets into the network.

Jacobs discloses encoding at least two predetermined bits (Fig. 5a; Para 26, bits 6 and 7 are encoded to indicate congestion along a given path or link in a path) in the at least one probe packet based at least in part upon a level of congestion associated with the at least one flow rate and controlling an admission of additional packets into the network (paras 4-7 and 24; a congestion level (respective threshold levels) associated with a given flow along a path is controlled by appropriate bits which are marked or encoded to indicate that congestion has occurred along a particular link in the path and thereby reducing (controlling) the flow for that path).

Network congestion control allows for reduction of packet loss due to packet overflow and therefore possible retransmission of lost packets and inturn decrease in network bandwidth efficiency.

Thus it would have been obvious at the time the invention was made to incorporate the teachings of Jacobs within Kelly so as to improve and enhance overall network bandwidth efficiency and performance by reducing packet loss and retransmission by maintaining proper congestion levels within a communications network.

Regarding claim(s) 2 , Kelly discloses denying the admission of the additional packets into the network if the at least two predetermined bits in the at least one probe packet encoded (Again Kelly fails to disclose two predetermined bits being encoded, Jacobs discloses two predetermined bits being encoded and reasons for combining same as for base claim 1).

Regarding claim(s) 3, Kelly discloses network congestion or link congestion from one host to another host, either from Host A to Host B or vice versa (Section 4 Para 2 lines 12-14, Kelly fails to disclose two predetermined bits being encoded, Jacobs discloses two predetermined bits being encoded and reasons for combining same as for base claim 1) .

Regarding claim(s) 4, Kelly discloses where the first network element echoes information associated with the at least one second predetermined bit in the at least one second probe packet in a transmission to the network (Again as in claim 3 Host A will echo back see Section 4 Para 2).

Regarding claim(s) 5, Kelly discloses the admission of the additional packets is based at least in part on priorities or importance of the plurality of packets and the additional packets (col 7 Para 2).

Regarding claim(s) 6, Jacobs discloses wherein the admission of the additional packets into the network is controlled by an entity that controls the network (Fig. 2, router serves to control admission of packets into the network and therefore controls the network).

Regarding claim(s) 7, Kelly discloses information associated with the at least two predetermined bits in the at least one probe packet is communicated to at least one of the first network element and the second network element (Fig. 2, shows distributed network elements with intermediate elements in-between, Kelly fails to disclose two predetermined bits being encoded, Jacobs discloses two predetermined bits being encoded and reasons for combining same as for base claim 1).

Regarding claim(s) 8, Kelly discloses where the at least one intermediate network element is part of a bandwidth-limited path in the network (Fig. 2, intermediate node has bandwidth of 30Mbps as opposed to source and sink nodes with 1000Mbps).

Regarding claim(s) 9-11, Kelly discloses where the plurality of packets comprise real-time packets, IP packets and voice over IP packets traversing a network (abstract, section 2).

Regarding claim(s) 12 and 13, Jacobs discloses video packet and/or multimedia transmission of packets including audio/visual packets (paras 2, 22 and 28), reasons for combining same as for claim 1.

Regarding claim(s) 14, Kelly discloses where the at least one predetermined bit is part of a Differentiated Services field in an IP header of the at least one probe packet (col 7 Para 2, Kelly fails to disclose two predetermined bits being encoded, Jacobs discloses two predetermined bits being encoded and reasons for combining same as for base claim 1).

Regarding claim(s) 15 & 16, Kelly discloses the predetermined rate is based on a network bandwidth allocated for the plurality of packets (Col 6 Para 1, the rate is dependent on network congestion and therefore in turn to network bandwidth).

Regarding claim(s) 18, Kelly discloses encoding the at least one predetermined bit in the at least one probe packet based at least in part on the at least one flow rate and stopping the flow rate (Section 4 Para 2; Kelly fails to disclose two predetermined bits being encoded, Jacobs discloses two predetermined bits being encoded and reasons for combining same as for base claim 1).

Regarding claim(s) 19 & 20, Kelly discloses lowering a transmission rate between the first network element and the second network element or between any two network endpoints (Section 6.3, col 12 paras 2 & 3, varying traffic loads levels are set within the TCP connections and traffic is delayed as appropriate; Kelly fails to disclose two predetermined bits being encoded and reducing the flow rate based on two encoded predetermined bits, Jacobs discloses two predetermined bits being and associated controlling of the flow rate as appropriate, reasons for combining same as for base claim 1).

Regarding claim(s) 22, Kelly discloses simulations being performed (section 5 & 6) which incorporate computer algorithms to be executed by specific elements (routers, switches, computer processors etc) within a system.

(10) Response to Argument

With respect to claim(s) 1, Applicant contends "Kelly appears to be concerned only with sending packets from host A to host B and not determining at least one flow rate "at least one intermediate network element on the network path,".

Examiner respectfully disagrees, Kelly clearly discloses sending a probe packet from host A to host B (sec. 4 Para 3) and determining a flow rate associated with the packets (section 4 col 2 Para 2), target rate R is the flow rate of sending host A to receiving host B, furthermore each sending host and receiving host can have its own flow rate, see Figs 1 & 2 with varying flow rates from source node to intermediate node(s) and then finally to sink node. With regards to the intermediate nodes, Kelly discloses (section 1 col 2 last Para) routers within the network of end-to end systems

which act as intermediate network elements on the network path. Applicant's contention that "routers within the network as taught by Kelly are "on the network path" of the first network element and the second network element" is irrelevant, the routers between two end points suffices as "intermediate network element" which is clearly taught within Kelly. Figs. 1 & 2 illustrate network paths from source to sink nodes with intermediate nodes or network elements in-between, determining of the network element is based on ECN (Explicit congestion notification) by setting a CE bit to indicate congestion level on the route take by a packet (sec 1, Para 2) say from source to the first intermediate node and first intermediate node to sink node. Different congestion levels within a path are indicative of having one or more intermediate network elements.

Applicant further contends, Jacobs fails to disclose encoding of two predetermined bits in the at least based at least in part upon a level of congestion associated with the at least one flow rate.

Examiner respectfully disagrees, Jacobs explicitly discloses encoding at least *two predetermined bits*, (Fig. 5a; Para 26) bits 6 and 7 are encoded to indicate congestion along a given path or link in a path, these two bits are used in pairs and not singly which is based at least in part upon a level of congestion (Para 24), threshold levels are associated with a given flow along a path by setting maximum buffer capacities to indicate congestion level and thereby reducing or controlling the flow for that path). Congestion levels are associated with the at least one flow rate (one flow rate being from sender to intermediate element or the receiver, Fig. 5a) and controlling

an admission of additional packets into the network (paras 4-7), packet admission is controlled based on the congestion notification status as set in the CE bit (Fig. 5a).

Applicant further contends that "Jacobs merely reduces the loading network resources and fails to disclose, or even suggest, controlling an admission of additional packets,". Applicant has construed the meaning of "reduces the loading network resource". Clearly Kelly controls data rate transmission via the use of control packets indicating congestion statuses sent back to the original sender from the receiver (see Fig. 5c), to which the sender then reduces the transmission rate accordingly (Para 9, 24).

Finally the Applicant contends that Jacob teaches away from Kelly.

Examiner respectfully disagrees, Kelly discloses an ECN probe based admission control protocol scheme used to control data transmission thru a network that is fast, scalable and robust. Jacobs discloses a communications system utilizing an ECN bit notification in packet headers to indicate congestion statuses of network elements from source to sink nodes thereby controlling the flow of packets across a network without having packet drops and/or discard. Applicant further contends that Kelly uses UDP vs. Jacobs which uses RTP. Examiner fails to understand Applicants contention, RTP is normally sent via UDP, for example you can send MPEG-4 video by wrapping the video stream in a RTP packet, wrapping the audio stream in another RTP packet, then wrapping each RTP packet in a UDP packet, then controlling the stream using RTSP, thus why wouldn't one of ordinary skill in the art combine Jacobs with Kelly to achieve

desired results since the two are related arts and satisfy the desired outcomes as recited within the applicant's claims.

Thus in view of foregoing reasoning, the Examiner respectfully asserts Kelly T. (An ECN Probe Based Connection Acceptance Control) paper in view of Jacobs et al (US 2003/0107994 A1) does disclose all limitations of claim 1 and therefore the rejection to claim 1 is sustained and not patentable.

Furthermore, Claim 23 is a system claim which recites features similar to claim 1 and therefore the rejection to claim 23 is sustained for reasons similar to claim 1.

Lastly the rejection to dependent claims 2-16, 18-20 and 22 is sustained as they recite features which are properly rejected based on above cited art(s) accordingly.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/RAJ JAIN/

Examiner, Art Unit 2416

Conferees:

/William Trost/

Art Unit: 2416

Supervisory Patent Examiner, Art Unit 2416

/Huy D. Vu/

Supervisory Patent Examiner, Art Unit 2416